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Flying Operations

T-41 OPERATIONS PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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OPR: 34 OG/OGV (Maj Bruce McNaughton)

Certified by: HQ USAF/XOO
(Maj Gen Richard A. Mentemeyer)

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This instruction implements AFPD 11-2, *Aircraft Rules and Procedures,* and references AFI 11-202, Volume 3, *General Flight Rules.* Along with its complementary **Chapter 5** (Local Operating Procedures), this instruction prescribes standard operational procedures to be used by all pilots operating Air Force T-41 aircraft. This instruction is not applicable to the Air National Guard or Air Force Reserve Command. File a copy of all approved waivers with this instruction. **Attachment 1** contains a glossary of references, abbreviations and acronyms.See paragraph **1.8.** of this volume for guidance on submitting comments and suggesting improvements to this publication.

The Paperwork Reduction Act of 1974 as amended in 1996 and AFI 33-360, Volume 2, *Forms Management Program*, affect this publication. Maintain and dispose of records created as a result of processes prescribed in this instruction in accordance with AFMAN 37-139, *Records Disposition Schedule*.

SUMMARY OF REVISIONS

This revision incorporates change to paragraph **3.7.2.** making it more restrictive under severe turbulence conditions. An (|) indicates revisions from previous edition.

Chapter 1

GENERAL INFORMATION AND REQUIREMENTS

1.1. Scope. This instruction outlines the procedures applicable to the safe operation of T-41 aircraft. With the complementary references cited, this instruction prescribes standard operational procedures to be used by all pilots operating T-41 aircraft. Aircraft Commanders will ensure all occupants of the aircraft comply with this directive.

1.2. Pilot's Responsibility. This instruction, in conjunction with other governing directives, prescribes T-41 procedures under most circumstances, but it is not to be used as a substitute for sound judgment or common sense. The pilot in command (PIC) is ultimately responsible for the safe and effective operation of the aircraft.

1.3. Crew Requirements. The minimum crew for the aircraft is one pilot in the left seat.

1.4. Flight Time, Flight Duty Period, and Medical Restrictions:

1.4.1. Flight duty period will not exceed 12 hours regardless of aircrew composition.

1.4.2. Aircrew members will not be scheduled to fly or perform aircrew duties when taking oral or injected medication, unless an individual medical waiver has been granted by the Command Surgeon. Aircrew members may not self-medicate except according to AFI 48-123, *Medical Examinations and Standards.* The following is a partial list of medications permitted without medical consultation:

1.4.2.1. Skin antiseptics, topical antifungals, 1 percent hydrocortisone cream, or benzoyl peroxide for minor wounds and skin diseases that do not interfere with the performance of flying duties or wear of personal equipment.

1.4.2.2. Single doses of over-the-counter aspirin, acetaminophen or ibuprofen to provide pain relief for minor, self-limiting conditions.

1.4.2.3. Antacids for mild, isolated episodes of indigestion.

1.4.2.4. Hemorrhoidal suppositories.

1.4.2.5. Bismuth subsalicylate for mild cases of diarrhea.

1.4.2.6. Oxymetazoline or phenylephrine nasal sprays when used by aircrew members as “get me downs” in the event of unexpected ear or sinus block during flight. These shall not be used to treat symptoms of head congestion existing prior to flight. (Use renders aircrew members DNIF until cleared for further flight by a flight surgeon.)

1.5. Clothing Requirements. All T-41 aircrew members will wear flight suits and boots. Aircrew members will remove rings and scarves before performing aircrew duties. Flight gloves will be worn during ground operations, takeoffs, landings, touch and goes, or Simulated Forced Landings (SFLs.)

1.6. Deviations. Do not deviate from the procedures and guidance in this publication except when necessary to preserve safety or protect lives.

1.6.1. The PIC has ultimate authority and responsibility for the course of action to be taken.

1.6.2. Report all deviations or exceptions without waiver through channels to the major command (MAJCOM) office of primary responsibility (OPR).

1.7. References. The primary references for T-41 operations are the *T-41D Flight Manual* (Technical Order (T.O.) 1T-41D-1), the *T-41C/D Flight Manual* (T.O. 1T-41C-1), as well as this instruction. Training units may expand these basic procedures with publications detailing maneuvers and instructional techniques. These publications may be used to augment and expand initial qualification training, but in no case will they be less restrictive.

1.8. Recommended Changes and Waivers:

1.8.1. Submit suggested improvements to this instruction on AF Form 847, **Recommendation for Change of Publication**, through standardization/evaluation (stan/eval) channels. Squadron Stan/Eval will forward approved recommendations to 34 OG/OGV in accordance with AFPD 11-2, *Aircraft Rules and Procedures*, paragraph 2.4.1. AF/XO is approval authority for changes and revisions to this instruction.

1.8.2. Unless otherwise directed, MAJCOM/DRU DOs have waiver authority for this publication according to AFPD 11-2. Submit waiver requests in message or memorandum format through Stan/Eval channels. Waiver authority is delegated to unit DOs in specific areas of this document.

Chapter 2

MISSION PLANNING

2.1. Maps and Charts. Local area Sectional and Visual Flight Rules (VFR) Terminal Area Charts ("Class B Airspace charts") must be on board the aircraft. When flying outside the local area, charts covering the route of flight must be on board the aircraft. These charts must be appropriate for the type of mission flown. Low level charts and route books used during flight will be annotated with location and dimensions of class A/B/C/D airspace, civil/military airfields and other potential high density traffic areas (e.g., parachute activity areas and ultra light/hang glider/ glider sites, etc.) within 5 nm of any planned VFR route or MTR lateral boundary. Applicable airfield approach control frequencies in the vicinity of class A/B/C/D airspace will be annotated and briefed on all such flights. In addition, annotate and brief the intersection of other VR/IR routes (if applicable) and any other possible ares of conflict.

2.2. Required Documents. The following documents must be on board for flight:

2.2.1. Aircraft weight and balance.

2.2.2. Airworthiness certificate.

2.2.3. Aircraft registration.

2.2.4. AFTO Form 781F, **Aerospace Vehicle Flight Report and Maintenance Document**.

2.3. Briefing and Debriefing. The pilot-in-command (PIC) is responsible for presenting a logical briefing that will promote safe, effective mission accomplishment. In addition, the following guidance applies:

2.3.1. Begin briefings at least 45 minutes before scheduled takeoff.

2.3.2. MAJCOMS will provide briefing guides for use by the PIC. Guides will contain a reference list of items that may apply to particular missions. Items listed may be briefed in any sequence. Specific items not pertinent to the mission need not be covered.

2.3.3. All missions will be debriefed.

2.3.4. On subsequent flights, the PIC must brief only those items that have changed from the previous flights.

2.3.5. Required topics for flight briefings are contained in local **Chapter 5.**

2.4. Flight Crew Information File (FCIF). The FCIF is used to ensure that aircrews receive time-critical information prior to signing out aircraft. Aircrews will ensure they have read the latest FCIF and signed it off prior to signing out aircraft from home station.

Chapter 3

NORMAL OPERATING PROCEDURES

3.1. Preflight:

3.1.1. A qualified T-41 pilot or maintenance personnel must supervise T-41 ground handling. Use extreme caution when ground handling aircraft. Improper procedures may result in structural damage. Do not use the empennage to ground handle or turn the aircraft.

3.1.2. Visually check fuel quantity prior to every flight. Check fuel samples for impurities and proper type after every refueling and before the first flight of the day. Fuel should be allowed to settle for 30 minutes to an hour to obtain the most valid sampling. If the sample is good, pour back into tank or follow local procedures for sump fuel. If the sample is bad, immediately contact local refueling/maintenance personnel.

3.1.3. Do not walk through the arc of the propeller.

3.1.4. Do not hand prop the aircraft. If the pilot confirms the master and ignition switches are off with the ignition key removed, the propeller may be turned to facilitate ground handling or to loosen congealed oil prior to cold starts. This does not constitute “hand-propping.”

3.1.5. Only maintenance personnel may perform jump starts. If the aircraft requires a jump start for the first sortie of the day, record it in the AFTO Form 781A, **Maintenance Discrepancy and Work Document**. If the aircraft will not start without a jump start on any subsequent flight, abort the aircraft and enter this in the AFTO Form 781A.

3.1.6. Ensure a fire bottle is in the vicinity prior to engine start.

3.1.7. Ensure all aircraft surfaces are clear of frost, ice, and snow prior to flight.

3.1.8. When starting behind another aircraft, ensure a minimum of 10 ft nose-to-tail separation.

3.2. After Engine Start:

3.2.1. If the engine fails after warm-up for no apparent reason, abort the aircraft. Enter all engine failures or abnormalities on the AFTO Form 781A to include the total time the engine ran. Debrief the failure to the Flying Safety Officer, maintenance, and Quality Assurance Evaluator (QAE).

3.2.2. Do not on-load or off-load personnel or equipment while the engine is running.

3.3. Ground and Taxi Operations:

3.3.1. A qualified T-41 pilot will perform all engine starts. Exception: students upgrading in the T-41 may start the engine.

3.3.2. Personnel not actively involved in refueling will remain at least 50 ft away from an aircraft refueling operation. In addition, do not operate the engine, taxi, or radiate electromagnetic energy (radio, DME, or transponder operation) within the 50 ft safety zone.

3.3.3. Pilots will ground handle the T-41 whenever minimum wingtip clearances will be compromised during taxi. Twenty-five feet is the minimum wingtip clearance. Exceptions. A 10 ft minimum applies if:

3.3.3.1. A wingwalker monitors taxi clearance, or

3.3.3.2. A locally based aircraft uses a taxi line to avoid permanent structures, local aircraft in designated parking spots or support equipment in designated areas.

3.3.4. Maintain at least two ship-lengths behind light single-engine aircraft. Maintain at least five ship lengths (of the preceding aircraft) behind multi-engine or jet aircraft and 500 ft behind taxiing helicopters.

3.3.5. Use proper tailwind/headwind/crosswind control inputs while taxiing. Use caution to avoid upsets due to strong jet/prop blast from larger aircraft.

3.3.6. Pilots will avoid taxiing through snowdrifts and significant accumulations of ice. To avoid damage to the propeller, plan to taxi around gravel and puddles of water and avoid high power settings on the ground (greater than 1500 RPM) when possible. When damage to the prop tips is likely, pilots will maintain full aft elevator control unless wind conditions dictate otherwise.

3.3.7. Cease all taxi operations when the wind exceeds 35 knots. If the wind exceeds flight manual limits (26 knots) for unassisted taxi, turn the aircraft into the wind and stop. Resume taxiing when the wind subsides or when wing walkers are in place. Ensure wing walkers are properly briefed on wing walking procedures. Taxi directly into the wind if practical. One wing walker is required for power on taxi, but more may be used. The first available person restrains the upwind wing from the outboard strut or wing tie-down point (using a rope or handle.) The second person restrains the upwind horizontal stabilizer (hands *inboard* of the elevator horn) to help preserve a level taxi attitude. The third person restrains the downwind wing, and the fourth person restrains the downwind horizontal stabilizer. Taxi at a slow walk and use proper flight control inputs for the wind direction. All personnel involved in wing walking will use extreme caution. If the aircraft control is lost during taxi, if wing walkers are ahead of the leading edge of the wing, or if there is even a slight possibility of a personnel propeller strike shut down the engine immediately.

3.4. Engine Run-Up. Accomplish engine run-ups before every flight. Do not perform an engine run-up while an aircraft is stopped or taxiing in front of your aircraft. Do not taxi in front of another aircraft performing an engine run-up.

3.5. Takeoff.

3.5.1. T-41 operations require prepared surface runways. Minimum runway length is 2000 ft or the sum of the takeoff and landing rolls, whichever is greater. Intersection takeoffs are approved provided available runway length meets this requirement.

3.5.2. Minimum runway condition reading (RCR) for takeoff is 12. Do not takeoff if existing crosswind component exceeds RCR.

3.5.3. The maximum wind for takeoffs and touch and goes is 26 knots total, 15 knots crosswind components. With flaps greater than 20 degrees, 10 knots is the maximum crosswind component.

3.5.4. The maximum density altitude for T-41 takeoffs with back seat passengers is 9,500 ft.

3.5.5. Do not take off over any raised barrier (for example, MA-1A, BAK-15). Avoid rolling over any cables or arresting gear during taxi or takeoff.

3.6. Minimum Altitudes. Minimum en route altitude is 1000 ft AGL. Minimum altitude during a Simulated Forced Landing (SFL) is 200 ft AGL except to prepared surface runways.

3.7. Weather Minimums. VFR flight in weather near minimums presents increased risks even for experienced pilots. Pilots will use judgement to land or reverse course rather than fly in marginal conditions. Although alternates are not strictly required under VFR, when forecast winds reach or exceed limits, pilots will carefully consider routes and fuel requirements for possible diversions.

3.7.1. The minimum ceiling and visibility for VFR flight is 1500 ft and 3 miles.

3.7.2. Flight in forecast severe turbulence requires 34 OG/OGV approval. If severe turbulence is reported, cease operations in the affected area.

3.8. Clearing. Pilots must understand that many VFR pilots use uncontrolled training areas and surrounding airspace. The concept of see and avoid is critical.

3.9. Transfer of Aircraft Control. Both pilots must know at all times who has control of the aircraft. In all cases, the pilot assuming control of the aircraft will state "I have the aircraft" and will shake the yoke. The pilot relinquishing control will state: "You have the aircraft." Once assuming control of the aircraft, maintain control until relinquishing it as stated above.

3.10. Fuel Requirements. Plan all missions to land with a minimum of 1 hour of usable fuel remaining. Declare minimum fuel to an appropriate traffic control or flight following agency when it becomes apparent an aircraft will land with less than the following reserves.

3.10.1. Minimum fuel–9 gallons usable fuel.

3.10.2. Emergency fuel–6 gallons usable fuel or when both tanks indicate less than 1/8 full, whichever occurs first.

3.11. Landing Restrictions:

3.11.1. Minimum RCR for landing is 12. Do not land if crosswind component exceeds RCR.

3.11.2. The maximum wind for landing is 35 knots total or a 15 knot crosswind component. With flaps greater than 20 degrees, 10 knots is the maximum crosswind component.

3.11.3. Do not land over any raised web barrier (for example, MA-1A, BAK-15). Avoid landing on or rolling over any cables or barriers.

3.12. Functional Check Flights (FCF) . FCFs are performed after accomplishing inspections or maintenance to assure the aircraft is airworthy and capable of mission accomplishment.

3.12.1. Conditions requiring an FCF include (but are not limited to) major retrofit modifications; removal or replacement of moveable flight control surfaces (except repaint); major repairs that would affect the flying characteristics of the aircraft; or the adjustment, removal, or replacement of major components of the flight control system.

3.12.2. The unit commander is responsible for the FCF program. The unit commander may waive a complete FCF and authorize an FCF to check only systems disturbed by maintenance, inspection, or modification.

3.12.3. The best-qualified instructor or stan/eval aircrews will accomplish FCFs. They will be designated FCF qualified to their assigned aircrew position by the unit commander in a memorandum.

3.13. Post Flight. Pilots will clear the landing runway prior to performing the After Landing check.

3.13.1. Pilots will tie down or hangar the aircraft if it will be left unattended. Always chock the aircraft in an appropriate parking spot. Crews remaining off-station overnight will carry chocks, tie-downs, and extra engine oil.

3.13.2. Complete the AFTO Form 781F and notify maintenance of discrepancies. Inform maintenance, QAE, and the Flight Safety Office of any ground or air aborts.

3.14. Flights With Inoperative Equipment. All installed systems and equipment must be functional unless operations are authorized by **Table 3.1.** below or waived by the squadron DO. Local area flights are sorties which remain within unit-defined local training areas.

Table 3.1. Operational Equipment and Systems.

Item	Equipment	Remarks
Fuel System:		
1	MINIFLOW fuel computer	Not required for VFR flights if tanks are filled before each takeoff and sortie durations are limited to 2.5 hours.
Landing Gear:		
1	Tires	Valve stem caps not required.
Avionics:		
1	Headset and Intercom	Required for all crewmembers.
2	Transponder	Required to depart home station. VFR flight permitted to reposition for repairs (comply with FAR 91.215.)
3	VHF Communication Radios	One radio must transmit and receive.
4	VOR receivers/OBS displays/DME	Not required for local area VFR flights.
5	ADF and Marker Beacon	Not required for VFR flight.
6	GPS receiver, display, and remote OBS	Not required for local area VFR flights.
Instrumentation:		
1	Instrument and panel lights	Not required for day flight.
2	Turn Coordinator and Inclinometer	Not required for day VFR flight.
Airframe and Cabin:		
1	Seat Belts/Shoulder Harness	Lap belts and/or shoulder harnesses may be inoperative for unoccupied seats.
2	Cabin heat	The cabin heat control need not function if secured in the closed position.
Electrical System:		
1	Multifunction G-meter/Voltmeter	Not required.
2	Landing/Taxi Lights	One bulb may be inoperative.
3	Navigation Lights	Not required for day operations.
4	Pitot Heat	Not required for VFR unless in visible moisture or above the freezing level.

Chapter 4

ABNORMAL OPERATING PROCEDURES

4.1. General. Follow the procedures in this chapter when other than normal circumstances occur. These procedures do not supersede procedures contained in the flight manual. The pilot in command is primarily responsible for handling in-flight emergencies. Pilots should take whatever action is necessary to safely terminate the emergency. The additional pilot (if applicable) will confirm all critical action procedures have been accomplished and provide checklist assistance at the request of the pilot in command.

4.1.1. Refer to your checklist and IFG for additional guidance. If time and conditions permit, inform the appropriate controlling agency with the following information about your situation:

4.1.1.1. Aircraft call sign, type, and tail number.

4.1.1.2. Position and altitude.

4.1.1.3. Nature of emergency.

4.1.1.4. Number of people on board.

4.1.1.5. Fuel on board.

4.1.1.6. Intentions (desired runway and ETA).

4.1.1.7. Assistance required.

4.1.1.8. Squawk emergency code 7700 (if warranted.)

4.1.2. The situation will dictate whether you should return to the home airfield or land at another suitable airfield. Deviate from normal return routes and altitudes if the situation warrants. When deviating, inform the controlling agency, if possible.

4.2. Radio Failure. For a no radio (NORDO) recovery, the procedures in AFI 11-205, *Aircraft Cockpit And Formation Flight Signals,* and Flight Information Publications (FLIP) apply. Comply with the following general procedures:

4.2.1. For IFF procedures, set transponder code to 7600 until safely landed.

4.2.2. At a controlled airfield, remain outside or above Class D airspace until the direction of landing has been determined. Rock your wings on downwind and acknowledge tower light signals by rocking your wings. If no light signal is given, land unless a traffic conflict exists.

4.2.3. At uncontrolled airfields, remain 500 ft above the published pattern altitude while attempting to determine the landing runway. If unable to determine the landing runway from traffic flow, observe the wind and pattern direction indicators. Once the landing runway has been determined, join the airfield traffic pattern and land.

Chapter 5

LOCAL OPERATING PROCEDURES

5.1. Use of This Chapter. This chapter is reserved for unit local operating procedures. Units may also publish Chapter 5A containing the same information in condensed format to be carried in-flight along with the aircraft checklist. If this chapter is incorporated in another base publication (instruction, supplement, etc.), a single page insert will be used referencing its location or the entire publication will be inserted, as appropriate.

5.2. Guidance. These procedures will not be less restrictive than those contained elsewhere in this instruction. Unnecessary repetition of guidance provided in other established directives should be avoided. However, reference to those directives is acceptable when it serves to facilitate location of information necessary for local operating procedures.

5.3. Procedures for Publishing. When publishing Chapter 5, units will forward copies to the MAJCOM and appropriate subordinate agencies who will review it and return their comments or required changes back to the units, as appropriate. If a procedure is determined to be applicable to all T-41 units, it will be incorporated into the basic instruction.

5.4. Organization of Chapter 5. The local Chapter 5/5A will be organized in the following manner and will include, at a minimum, the following information:

5.4.1. Section A. Introduction

5.4.2. Section B. General Policy.

5.4.3. Section C. Ground Operations.

5.4.4. Section D. Flight Operations.

5.4.5. Section E. Abnormal Procedures.

5.4.6. Attachments. Illustrations.

5.5. Procedures for Inclusion. This chapter will include procedures for the following, as applicable:

5.5.1. Command and control.

5.5.2. Aircrew Publication Requirements.

5.5.3. Diversion instructions and fuel requirements

5.5.4. Local weather procedures.

5.5.5. Cross-country procedures

5.5.6. Unit standards (optional).

5.6. Forms Adopted. AF Form 847, *Recommendation for Change of Publication;* AFTO Form 781A, *Maintenance Discrepancy and Work Document;* AFTO Form 781F, *Aerospace Vehicle Flight Report and Maintenance Document.*

CHARLES F. WALD, Lt General, USAF
DCS/Air & Space Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 11-2**,** *Aircraft Rules and Procedures*

AFI 11-2T-41, Volume 1, *T-41 Aircrew Training*

AFI 11-202, Volume 3, *General Flight Rules*

AFI 11-205, *Aircraft Cockpit And Formation Flight Signals*

AFMAN 37-139, *Records Disposition Schedule*

AFI 48-123, *Medical Examinations and Standards*

Joint Publication 1-02*, DoD Dictionary of Military and Associated Terms*
T.O. 1T-41A-1, *USAF T-41A Flight Manual*

Abbreviations and Acronyms

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFORMS—Air Force Operations Resource Management System

AFTO—Air Force Technical Order

AFPD—Air Force Policy Directive

AGL—Above Ground Level

DO—Director of Operations

FCIF—Flight Crew information File

FLIP—Flight Information Publications

FT—Feet

HQ—Headquarters

IP—Instructor Pilot

MAJCOM—Major Command

NORDO—No Radio

NOTAM—Notice To Airman

OG—Operations Group

OGV—Operations Group Standardization/Evaluation

OPR—Office of Primary Responsibility

PDO—Publishing Distribution Office

PIC—Pilot in Command

RCR—Runway Condition Reading

SOF—Supervisor of Flying

STAN/EVAL—Standardization/Evaluation

T.O.—Technical Order

VFR—Visual Flight Rules